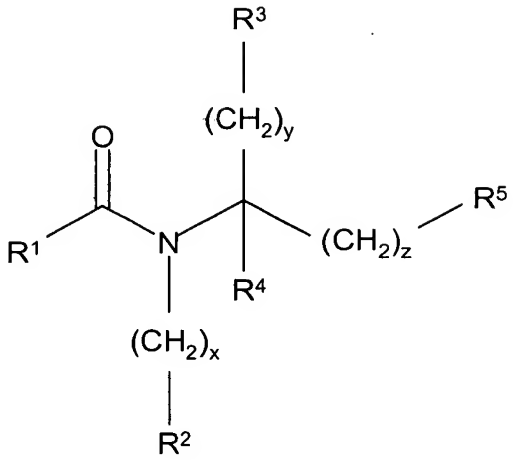
Claims

1. A compound of formula (I)



(I)

wherein:

R^1 is selected from:

a) phenyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, CF_3, halo, CN, NR^7R^8, OCF_3, SOR^6, SO_2R^6 and OC_1-C_6 alkyl, wherein said alkyl group may be optionally substituted by a C_3-C_8 cycloalkyl group, and

b) Aromatic Heterocycle, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, NH_2, CF_3, halo, OH, OC_1-C_6 alkyl, SR^6, SOR^6, SO_2R^6, NR^7R^8 wherein R^8 may be optionally substituted by NH_2, phenyl or Heterocycle, and OPh wherein Ph may be optionally substituted by 1-3 groups each independently selected from halo and C_1-C_6 alkyl;

R^2 is selected from:

a) phenyl, which is optionally substituted by C_1-C_6 alkyl, halo, CN, NR^7R^8, OC_1-C_6 alkyl, OCF_3, CF_3 and SO_2R^6,

b) OPh, which is optionally substituted by C_1-C_6 alkyl, halo, OC_1-C_6 alkyl, OCF_3, CF_3 and SO_2R^6,

c) C_3-C_8 cycloalkyl which is optionally fused to phenyl,

d) Aromatic Heterocycle,

e) R^6,

f) $C(O)NR^6R^6$, and

g) Heterocycle, which is optionally substituted by $C(O)R^6$;

R^3 is selected from:

a) phenyl, said phenyl being optionally fused to Heterocycle and said phenyl or said fused phenyl being optionally substituted by 1-3 groups each independently selected from: C_1-C_6 alkyl, CF_3, halo, CN, OCF_3, SO_2R^6 and OC_1-C_6 alkyl,

b) Heterocycle,

c) R^6,

d) 3-8 membered cycloalkyl group, which is optionally substituted by C_1-C_6 alkyl, and

e) Aromatic Heterocycle, which is optionally substituted by C_1-C_6 alkyl;

R^4 is hydrogen or CH_3;

R^5 is selected from:

a) $CONH_2$, $CONHR^6$, $CONR^6R^6$, R^6, NH_2, NHR^6, OH, OR^6, $OC(O)NHR^6$, $NHC(O)H$, $NHC(O)R^6$, and

b) Aromatic Heterocycle, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, NH_2, CF_3, halo, SR^6, OH, OC_1-C_6 alkyl, NHR^6 wherein the R^6 moiety may be optionally substituted by phenyl or Heterocycle, and OPh wherein Ph may be optionally substituted by 1-3 groups each independently selected from halo and C_{1-6} alkyl;

R^6 is C_{1-6} alkyl;

R^7 is hydrogen or C_1-C_6 alkyl;

R^8 is C_1-C_6 alkyl;

or NR^7R^8 forms a monocyclic saturated ring system containing between 3 and 7 ring atoms;

x is 0, 1 or 2,
y is 0, 1 or 2, and
z is 0, 1 or 2, and

wherein:
Aromatic Heterocycle may be defined as a 5-6 membered aromatic heterocycle containing 1-4 heteroatoms each independently selected from N, O and S, said ring optionally fused with a phenyl or a 3-8 membered cycloalkyl group;

Heterocycle is a 5-8 membered saturated or partially saturated ring containing 1-3 heteroatoms each independently selected from N, O and S, said ring optionally fused with phenyl;

a tautomer thereof or a pharmaceutically acceptable salt, solvate or polymorph of said compound or tautomer.

2. A compound according to claim 1 wherein R^1 is selected from:

a) phenyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, CF_3, halo, CN, NR^7R^8, SO_2R^6 and OC_1-C_6 alkyl, and

b) Aromatic Heterocycle, wherein said Aromatic Heterocycle is selected from pyridyl, pyrazinyl, pyrimidinyl, quinolinyl, quinoxalinyl, isoxazolyl and pyrazolyl, each aromatic heterocycle optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, SR^6, SO_2R^6, NH_2, CF_3, halo, OH, OC_1-C_6 alkyl, NR^7R^8 wherein R^8 may be optionally substituted by NH_2, phenyl or Heterocycle, and OPh wherein Ph may be optionally substituted by 1-3 groups each independently selected from halo and C_1-C_6 alkyl;

R^2 is selected from:

a) phenyl, which is optionally substituted by C_1-C_6 alkyl, halo, OC_1-C_6 alkyl, OCF_3, NR^7R^8, CF_3 or SO_2R^6,

b) OPh, which is optionally substituted by C_1-C_6 alkyl or halo,

c) cyclopropyl or 1- or 2-indanyl,

d) pyrazolyl, which is optionally substituted by R^6,

e) R^6,

f) $C(O)N(CH_3)_2$, and

g) a 5-6 membered saturated ring containing 1 nitrogen atom, said ring being substituted by $C(O)R^6$;

R^3 is selected from:

a) phenyl, said phenyl being optionally fused to Heterocycle and said phenyl or said fused phenyl being optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, halo, CN and OC_1-C_6 alkyl,

b) R^6,

c) cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl, which is optionally substituted by C_1-C_6 alkyl; and

d) Aromatic Heterocycle, wherein said Aromatic Heterocycle may be defined as a 5-6 membered aromatic heterocycle containing 1 or 2 nitrogen atoms, said ring optionally fused with a phenyl or a 3-8 membered cycloalkyl group.

R^4 is H;

R^5 is selected from: $CONH_2$, $CONHR^6$, $CONR^6R^6$ and R^6;

R^6 is methyl;

x is 1;

y is 0; and

z is 0 or 1.

3. A compound according to claim 2 wherein R^1 is selected from:

a) phenyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, CF_3, halo, CN, NR^7R^8, SO_2R^6 and OC_1-C_6 alkyl, and

b) Aromatic Heterocycle, wherein said Aromatic Heterocycle is selected from:

i) pyridyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, SO_2R^6, NH_2, CF_3, CN,

halo, OH, OC_1-C_6 alkyl, NR^7R^8 wherein R^8 may be optionally substituted by NH_2, phenyl or Heterocycle, and OPh wherein Ph may be optionally substituted by 1-3 groups each independently selected from halo and C_1-C_6 alkyl;

ii) pyrimidinyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, SO_2R^6, NH_2, CF_3, CN, halo, OH, OC_1-C_6 alkyl, NR^7R^8 wherein R^8 may be optionally substituted by NH_2, phenyl or Heterocycle, and OPh wherein Ph may be optionally substituted by 1-3 groups each independently selected from halo and C_1-C_6 alkyl;

iii) pyrazinyl, which is optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, NH_2, SR^6 and halo;

iv) quinolinyl;

v) quinoxalinyl, which is optionally substituted by OH;

vi) isoxazolyl, which is optionally substituted by 1-3 groups each independently selected from: C_1-C_6 alkyl; and

vii) pyrazole;

R^2 is selected from:

a) phenyl, which is optionally substituted by methyl, halo, methoxy, CF_3 or SO_2CH_3,

b) cyclopropyl or 1- or 2-indanyl,

c) pyrazolyl, which is optionally substituted by methyl,

d) $C(O)N(CH_3)_2$, and

e) piperidinyl substituted by $C(O)R^6$.

R^3 is selected from:

a) phenyl, said phenyl being optionally fused to 1,4-dioxan and said phenyl or said fused phenyl being optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, halo, CN and OC_1-C_6 alkyl;

b) R^6,

c) cyclopropyl, which is optionally substituted by C_1-C_6 alkyl; and

d) Aromatic Heterocycle, wherein said Aromatic Heterocycle is selected from pyrazolyl or pyridyl, both optionally substituted by C_1-C_6 alkyl;

R^5 is $CONH_2$ or CH_3; and
z is 0.

4. A compound according to any one of claims 1 to 3 wherein R^1 is phenyl, 2- or 3-pyridyl or 2,4-pyrimidinyl, said moieties being optionally substituted by 1-3 groups each independently selected from C_1-C_6 alkyl, halo, OC_1-C_6 alkyl, CN, SO_2R^6, NHR_7, $NHCH_2CH_2NH_2$ and CF_3;

5. A compound according to claim 4 wherein R^1 is phenyl, 2- or 3-pyridyl or 2,4-pyrimidinyl, said moieties being optionally substituted by 1-3 groups each independently selected from methyl, fluoro, chloro, methoxy, ethoxy, n-propoxy, CN, SO_2CH_3, NH_2, $NHCH_3$, $NHCH_2CH_2NH_2$, and CF_3.

6. A compound according to any one of claims 1 to 5 wherein R^2 is selected from:

a) phenyl, which is optionally substituted by methyl, fluoro, chloro, methoxy, CF_3 or SO_2CH_3,
b) pyrazolyl, which is optionally substituted by methyl, and
c) $C(O)N(CH_3)_2$.

7. A compound according to claim 6 wherein R^2 is phenyl, *para*-fluorophenyl, *para*-chlorophenyl, *para*-methylphenyl, 2,5-dimethylphenyl, *o*-methylphenyl and *para*-methoxyphenyl.

8. A compound according to any one of claims 1 to 7 wherein R^3 is selected from:

a) phenyl, said phenyl being optionally fused to 1,4-dioxan and said phenyl or said fused phenyl being optionally substituted by 1-2 groups each independently selected from methyl, methoxy, ethoxy, fluoro, chloro and CN;
b) isopropyl;
c) cyclopropyl; and
d) pyrazolyl and pyridyl, both optionally substituted by methyl.

9. A compound according to claim 8 wherein R^3 is 3-methoxyphenyl or 1,4-benzodioxanyl.

10. A compound according to any one of claims 1 to 9 wherein R^5 is $CONH_2$.

11. A compound according to claim 1 selected from:

2-Amino-*N*-[2-amino-1-(2-methylphenyl)-2-oxoethyl]-*N*-(4-chlorobenzyl)nicotinamide,
N-[2-Amino-1-(3-methoxyphenyl)-2-oxoethyl]-4-cyano-*N*-(4-methylbenzyl)benzamide,
N-[3-Amino-1-(3-methoxyphenyl)-3-oxopropyl]-4-methyl-*N*-(4-methylbenzyl)nicotinamide,
2-Amino-*N*-[(1*S*)-3-amino-3-oxo-1-phenylpropyl]-*N*-(4-methylbenzyl)nicotinamide,
5-Chloro-2-methylthio-N-[2-amino-1-{1,4-benzodioxan-6-yl}-2-oxoethyl]-N-(4-methylbenzyl)pyrimidine-4-carboxamide,
5-Chloro-2-amino-N-[2-amino-1-{1,4-benzodioxan-6-yl}-2-oxoethyl]-N-(4-methylbenzyl)pyrimidine-4-carboxamide, and
2-Amino-N-[carbamoyl-(2,3-dihydro-benzo[1,4]dioxin-6-yl)-methyl]-4,6-dimethyl-N-(4-methyl-benzyl)-nicotinamide;
and tautomers thereof and pharmaceutically acceptable salts, solvates and polymorphs of said compound or tautomer.

12. A pharmaceutical composition comprising a compound of formula (I) as claimed in any one of claims 1 to 11, or pharmaceutically acceptable salts, solvates or polymorphs thereof, and a pharmaceutically acceptable diluent or carrier.

13. A compound of formula (I) as claimed in any one of claims 1 to 11, or a pharmaceutically acceptable salt, solvate or polymorph thereof, for use as a medicament.

14. A method of treatment of a disorder or condition where inhibition of Oxytocin is known, or can be shown, to produce a beneficial effect, in a mammal,

comprising administering to said mammal a therapeutically effective amount of a compound of formula (I) as claimed in any one of claims 1 to 11, or a pharmaceutically acceptable salt, solvate or polymorph thereof.

15. Use of a compound of formula (I) as claimed in any one of claims 1 to 11, or a pharmaceutically acceptable salt, solvate or polymorph thereof, in the preparation of a medicament for the treatment of a disorder or condition where inhibition of Oxytocin is known, or can be shown, to produce a beneficial effect.

16. Use according to either claim 14 or claim 15, wherein the disorder or condition is selected from sexual dysfunction (including premature ejaculation), preterm labour, complications in labour, appetite and feeding disorders, obesity, benign prostatic hyperplasia, premature birth, dysmenorrhoea, congestive heart failure, arterial hypertension, liver cirrhosis, nephrotic hypertension, occular hypertension, obsessive compulsive disorder and neuropsychiatric disorders.

17. Use according to claim 16, wherein the disorder or condition is premature ejaculation.